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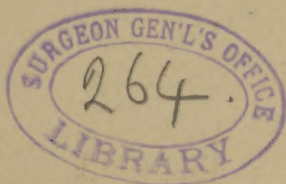
BY ✓

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## LEUCORRHOEA AS THE CAUSE OF

A RECENT EPIDEMIC OF

## PURULENT OPHTHALMIA

IN ONE OF OUR CITY CHARITABLE INSTITUTIONS.\*

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BY W. M. LESZYNSKY, M. D.,

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It will prove interesting at the present time, pending the passage of a bill which is now before the Legislature, entitled "An Act for the Better Preservation of the Health of Children in Institutions," and in view of the recent investigation and report as to the number of children in our public institutions afflicted with communicable eye diseases, to present the accompanying contribution in elucidation of a combination of causes in the production of purulent ophthalmia, and in reporting the history of a recent epidemic in which twenty-two children were the victims.

On the 1st day of January, 1886, in my capacity as attending physician, I assumed charge of one of our city charitable institutions for the care of children. The number of inmates was 212, whose ages ranged from three to

\* Read before the Clinical Society of the New York Post-graduate Medical School and Hospital, March 6, 1886.

fifteen years, 100 being girls over eight years of age, and the remaining 112 male and female children under five years. I found fifteen of the small children suffering from purulent ophthalmia, seven of whom were confined to bed. All of the small children had catarrhal conjunctivitis more or less marked (three being also affected with phlyctenular conjunctivitis, and five with blepharitis).

Thirty-eight of the large girls were similarly affected, but none had contracted ophthalmia.

Leucorrhœa was present in twenty-two small girls and in thirteen large ones. Within a few days subsequently seven additional cases of purulent ophthalmia presented themselves. At this time the cornea was involved in two cases, in one of whom both corneæ were ulcerated.

Upon inquiry and investigation ~~as to~~ the origin of this epidemic, I learned that during the month of November, 1885, there were seven cases of "mild" conjunctivitis, the number increasing to nearly sixty by the 1st of December. The first cases of purulent ophthalmia became manifest on the 24th of December, and a few days later six additional children were affected.

The first cases occurred in children who were the subjects of scrofulosis and anæmia, and a profuse leucorrhœa. This discharge from the vulva became very irritating and produced excessive pruritus, causing the unfortunate children to be frequently "disciplined" in order to prevent them from "indulging in pernicious habits," as they were repeatedly "caught in the act" of rubbing and scratching the parts with their fingers. I believe that the ophthalmia in these cases was caused by the direct contact of the pus from the vulva, the fingers of the child being the medium for conveyance.

As *all* of the female children having ophthalmia were also suffering from purulent vulvitis, it would be reasonable



to assume that this was the only source of contagion in every instance, and that they were *all* cases of auto-inoculation, were it not for the fact that four of the male children also had ophthalmia.

It is obvious that in these cases other factors must have been active in the propagation of the disease. The water-closets and drains were in good order, and the means for ventilation were satisfactory.

I discovered that towels and wash-rags, although sufficient in number, had been used indiscriminately; that the first four cases of purulent ophthalmia were but partially isolated, as the attendants continued in direct communication with the other children without adequate precautionary measures as to cleanliness and disinfection, and that no systematic plan of treatment or isolation had been adopted.

There was no evidence to justify me in believing the vaginitis or vulvitis to be of a "specific" nature.

I must acknowledge that a microscopical examination of the discharge, with the hope of discovering a coccus, was not made. In fact, the only cause that could be ascertained was scrofulosis and anæmia, and possibly personal uncleanness.

If we remember that nearly all of these children were former or recent residents in the slums of the city, and that their environment was such as to promote progressive deterioration of nutrition and the development of constitutional disease, it is not surprising that such a suppurative diathesis (if I may use such a descriptive expression) manifests itself and persists for a long time, in spite of a change to better hygienic surroundings.

Recognizing the gravity of the situation and the importance of prompt action, the ophthalmia patients were at once quarantined and my directions efficiently carried out

by the co-operation of ten reliable trained nurses, all of whom had special experience in the care of this class of cases.

Each and every child having catarrhal conjunctivitis, etc., was placed under suitable treatment and observation. In nearly forty of the children who were examined on the 1st of January the palpebral conjunctiva was granular and succulent. I mention these cases as they looked very suggestive of beginning trachoma. They recovered after ten days' treatment.

The most rigid discipline was established among the attendants in regard to the use of towels, wash-basins, etc. Wash-rags were destroyed and their employment discontinued.

As there was a superabundance of towels furnished by the managers, it was directed that each child should have a separate one, and as soon as the towel had been used it should be thrown into a large hamper provided for the purpose, and that no towel should, under any circumstances, be again made use of until it had been thoroughly boiled and washed. These orders were faithfully and energetically complied with.

It is only fair to state that the children in this asylum are well fed and properly clothed, and as generally well cared for as in other similar domiciles; but the advantage of having good food and suitable clothing is neutralized by the overcrowded condition of the dormitories. As in all charitable institutions of its kind, no special means had been adopted for the purpose of preventing the development and spread of eye diseases among the inmates until it became startlingly and painfully evident that contagious eye disease positively existed, and then adequate facilities for isolation were immediately and liberally provided.

In twelve of the earliest patients the chemosis of the

conjunctiva was so great that the cornea could not be inspected without the aid of the lid elevator.

CASE I.—In the case of L. S., aged eight years, who had for a long time been in poor physical condition, inflammation in her eyes was first noticed on the 29th of December.

*January 1st.*—The swelling of the eyelids was marked and the purulent discharge from both eyes was abundant. Corneæ clear. Patient had a profuse muco-purulent discharge from the vulva, she being one of the children who was so frequently “disciplined” in order to prevent her from rubbing the irritable labia.

*4th.*—Iced cloths had been assiduously applied day and night, and the eyes were frequently irrigated with bichloride solution (1 to 20,000) and kept as free from pus as possible, when the lids were everted and brushed with a ten-grain solution of nitrate of silver, any excess being neutralized by salt water (as excessive reaction had been noticed in some of the others), and followed by constant iced applications.

*5th.*—Discharge has entirely ceased. The chemosis of the ocular and palpebral conjunctiva has very much increased. The lids are dry, hot, tense, and hard. A grayish membrane has formed over the palpebral conjunctiva in both eyes. The child suffers considerable pain. Both corneæ are partly obscured by the folds of the chemotic conjunctiva, but the portions which are visible are seen to be slightly infiltrated. The pupils are contracted. Temperature 100° F. Atropine solution (four grains) was applied directly to each cornea, and in a short time both pupils became widely and regularly dilated. She was isolated in a private room, and specially attended by a nurse day and night.

The iced applications were temporarily discontinued, as the lids became blue, and hot-water cloths were substituted. A two-grain solution of atropine was ordered to be used every three hours, milk diet, whisky, etc. She is very cross and difficult to manage, screaming and squirming every time the eyes are touched.

*6th.*—Coughing very frequently during the night. This A. M.,



temperature 104° F., pulse 124, respirations 50. Dullness and fine râles over posterior and lower portion of both lungs. Ordered frequent change of position. Stimulants increased, and counter-irritation over posterior part of chest. Chemosis unchanged. Surface of lids is not so tense. A few flakes of mucus noticed in both eyes. The hot applications seem to give some relief, and the child does not protest so vigorously against their use as she did every time the iced cloths were applied. Evening temperature 102° F.

*7th.*—Temperature 100° F. Chemosis of ocular conjunctiva diminished. Right cornea opaque; left cloudy. Condition of eyelids unchanged. The membrane on palpebral conjunctiva is still present. A secretion of mucus is quite apparent. The hot applications were discontinued early this morning, and iced cloths used continually with intervals of one hour.

*11th.*—Swelling of lids is decreasing. Within the last forty-eight hours the discharge has steadily increased. To-day its purulent character is re-established. The membrane has been peeling off in fine shreds during the last few days and is gradually disappearing. Corneæ clearer; general physical condition improving. All pulmonary symptoms have vanished, with the exception of occasional cough; temperature 99·6° F.; atropine t. i. d.; frequent use of bichloride solution; ten-grain solution of alum applied to conjunctiva, by means of spray, every four hours; cold applications continued; stimulants, concentrated nourishment, etc.

*February 1st.*—Eyes improved steadily until the 23d, the discharge having nearly ceased, and the child was able to open her eyelids and look about.

She was allowed to sit up on the 24th, when a relapse took place, the lids becoming hot and swollen and the purulent character of the discharge reappearing.

The leucorrhœa still continues, although proper local measures for its relief have been resorted to in conjunction with the best of nutriment and tonic treatment.

*March 1st.*—There is opacity of right cornea. Leucorrhœa has nearly ceased.

CASE II.—F. S., aged five years. Attack began on the 24th



of December. When I saw her, on the 1st of January, there was a profuse purulent discharge from both eyes, with chemosis of ocular and palpebral conjunctiva. The lids were separated by aid of elevator, and the *right* cornea was found to be infiltrated and pupil contracted. The *left* cornea was not involved.

Leucorrhœa had been present for some time previous to attack, and it still existed. Nitrate of silver (10-gr. solution) applied to conjunctiva; atropine solution (4 gr.) in *right* eye; iced applications; bichloride solution.

*January 3d.*—Child complains of pain in *right* eye. Pupil has not dilated. Ocular conjunctiva is more swollen. Sclera in ciliary region is inflamed. Leeches applied and followed by instillation of atropine solution (4 gr.) *coup sur coup*.

*5th.*—Pupil remains contracted. Atropine solution (2 gr.) every three hours to relieve pain.

*8th.*—Silver has been applied once every day, and iced cloths, etc., continued; temperature 101·6° F.

*10th.*—Complains of headache; bowels acted once. At 5.30 P. M., temperature 103°; examination of lungs negative; ordered frequent change of position, stimulants, etc.

*12th.*—P. M., Temperature 103°. Swelling, redness, and tenderness over *right* supra-orbital region, extending to fronto-nasal junction and toward left internal canthus, with œdema of surrounding tissue. Looks like erysipelas. Hot-water applications substituted for iced cloths. Syr. rhei aromatic., 3jss.

*13th.*—P. M., Temperature, 100·8°. Bowels have not acted. There is a free purulent discharge from the left ear, which began this morning. *This was the first symptom indicating the existence of acute suppurative otitis.* There is no tenderness over mastoid. Patient feels more comfortable.

*14th.*—Enema administered, which was followed by a free evacuation. Temperature, P. M., 99·6°. The swelling and redness subsided very rapidly under the use of hot water.

As atropine seemed to produce irritation, and was the probable cause of the dermatitis, its use was discontinued. The discharge from the eyes having diminished, alum spray is used instead of silver.

*February 1st.*—After last note erysipelatous (?) inflammation

disappeared and no more hot water was used. A few days subsequently, the swelling and redness of lids having again become troublesome, iced cloths were resorted to for twelve hours without affording any relief, and once more the hot water proved beneficial.

As the eyes were improving, the *right* cornea getting clearer, but the pupil still remaining contracted, I placed a few drops of a four-per-cent. solution of cocaine on the cornea, and ordered a four-grain solution of atropine to be used *coup sur coup* for thirty minutes, with the following result: Face became red and swollen. There was profuse perspiration over entire body. Restlessness and mild delirium. Temperature 100.8°. *Right* pupil remained contracted. *Left* pupil became dilated. She has been receiving daily local treatment for the leucorrhœa without any perceptible benefit. Cod-liver oil and tonics have been constantly administered.

*March 1st.*—Daily mercurial inunction until two weeks ago. There is a slight discharge from right eye, and some opacities near margins of cornea. Pupil is somewhat irregular, and iris is probably bound down by posterior synechiæ. Left eye is in good condition. Leucorrhœa has almost entirely subsided.

CASE III.—A boy seven years of age; the attack began on the 24th of December. On the 1st of January there was decided chemosis of ocular and palpebral conjunctiva, with ulceration of both corneæ. The purulent discharge was abundant and irritating, and had produced spots of excoriation over the lower lids and upon the cheeks. He complained of pain in both eyes, and temperature was 101° F. The eyes were thoroughly irrigated with bichloride solution (1 to 20,000), and a four-grain solution of atropine applied until the pupils became fully dilated. Daily application of nitrate of silver and two-grain atropine solution. Iced cloths day and night.

*January 12th.*—Discharge has almost entirely ceased. Swelling of lids has subsided. Silver discontinued and the alum-spray substituted.

*27th.*—*Left* cornea perfectly clear. *Right* cornea has a large ulcer extending across the pupil.

*February 15th.*—Ulcer is healing rapidly.

*March 1st.*—Ulcer is limited to center of cornea, directly over the pupil.

CASE IV.—D. G., aged four years. Scrofulosis, anæmia, and leucorrhœa. Attack began January 2d. Both eyes were affected. On the ninth day she developed pneumonia. Temperature  $104^{\circ}$ , from which she recovered in five days, but a slight cough continuing a few days longer. Her eyes were nearly well by the 15th, but the vulvitis was not improved.

In three cases the *right eye only* was affected, and recovery took place in ten, fourteen, and twenty-four days, respectively. The use of a protective dressing over the fellow-eye was dispensed with, owing to the constant vigilance of the nurses. In *all* of these cases the *left eye* escaped infection. I think this favorable result can only be attributed to absolute cleanliness.

In one child who had old granular lids with cicatricial tissue, and a coloboma from iridectomy in the left eye, the ophthalmia was well marked, and affected both eyes. Under the usual plan of treatment, recovery took place within ten days.

In the remaining cases the duration of the disease varied from twelve to twenty-seven days, and in none of these did the cornea become seriously involved.

The development of pneumonia (probably hypostatic) in two cases, and occurring in each on the ninth day, is worthy of special note. Both children were in a debilitated condition for some time previous to the attack. During the constant application of iced or hot cloths to the eyes, it was found necessary for the patient to be kept lying upon her back. Hence the manifestation of passive pulmonary congestion and pneumonia.

The insidious development of acute suppuration of the middle ear in one of these cases is interesting, as there was

no complaint of earache, and no evidence of such complication until the discharge from the external meatus was noticed.

Being accustomed to witness the extreme caution observed in routine practice at the Manhattan Eye and Ear Hospital, in filling the ear with cotton during the application of antiseptic solutions to the eye, and being aware of the fact that the sudden introduction of cold fluid into the auditory canal frequently induces acute otitis, my nurses were instructed to plug the meatus every time the eyes were irrigated. There was no possibility of the cold water overflowing from the iced cloths, as lint was used, and the block of ice was covered by a towel upon which the small squares of lint were kept cold and moist.

I can not too forcibly emphasize the significance of so serious an element in the causation of this epidemic as the co-existence of leucorrhœa in the majority of those affected, and would especially direct your attention to the first series of cases in whose history presumptive evidence was forthcoming to justify me in expressing the belief that the primary cause of the ophthalmia was self-contamination through the purulent vulvitis.

Fully recognizing the danger to vision likely to arise as a result of purulent ophthalmia, it seems to me, from the clinical facts above reported, that, at the present time, while so much agitation and so much activity is being practically demonstrated for the benefit and protection of children in our public institutions, the importance of an examination as to the existence of leucorrhœa can not be overestimated, and should constitute an essential part of such investigation.









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